

Mr. Kevin Bilash
USEPA Region III
Land, Chemicals & Redevelopment Division 3LD20
1650 Arch Street
Philadelphia, PA 19103

July 29, 2022
File No. 4862.04

Re: Marcus Hook Industrial Complex
Monthly Progress Report – July 2022
Area of Interest 7
Marcus Hook, PA

Dear Mr. Bilash:

This monthly progress report is being submitted on behalf of the Evergreen Resource Management Operations (Evergreen) for AOI 7 at the Marcus Hook Industrial Complex (MHIC) in Marcus Hook, Pennsylvania. On December 9, 2021, a Revised Interim Measures (IM) Workplan was submitted to the United States Environmental Protection Agency (USEPA) to address arsenic in the subsurface at AOI 7. The IM Workplan was approved by the USEPA on February 15, 2022. The discussion below provides an update on IM pre-design investigation (PDI) activities.

Activities completed this reporting period

No field activities were completed during this reporting period (July 2022). The activities which were completed include data validation and the Bench Scale Treatability Study activities that occurred in the treatability lab at Terra Systems, Inc. (Terra Systems) in Claymont, Delaware. Details for these activities are presented below. Note that the results of the treatability testing will be submitted in a future progress report once the Bench Scale Treatability Study is completed.

- Data validation was completed on all groundwater samples collected during the May 2022 groundwater sampling event for dissolved arsenic and iron. The validated data is included as Table 1 attached.
- Treatability study samples from the reagent screening tests (calcium polysulfide, ion exchange resin, hydrated lime, and FerroBlack) for the following soil/well pairs were sent to SGS North America Inc. in Dayton, NJ for analysis of dissolved arsenic (aqueous) verification:
 - AOI7-BH-22-001 soil and MW-56D groundwater
 - MW-609D soil and MW-609D groundwater
 - MW-608D soil and MW-608D groundwater
- Reagent screening activities were completed for the following soil/well pairs in accordance with the IM Workplan:

- MW-560D soil and MW-560D groundwater
- MW-608D soil and MW-606S groundwater

Activities planned for the next reporting period

The activities planned for the next reporting period (August 2022) include continuing the Bench Scale Treatability Study activities, as described in the Revised IM Workplan.

Deviation from approved activities this reporting period

There were no deviations from the approved activities for this reporting period.

Deviation from approved schedule

There were no schedule deviations during this period. The schedule for the major milestones is provided below and the detailed schedule is included in Attachment A.

Task	Schedule
PDI Activities	3/2022 – 5/2022
Bench Scale Treatability Testing	5/2022 – 8/2022
Pilot Testing	8/2022 – 11/2022
IM Performance Monitoring	10/2022 – 11/2023

Very truly yours,
SANBORN, HEAD & ASSOCIATES, INC.



Colleen Costello, PG
Senior Vice President

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ATTACHMENTS

Attachment A – Interim Measures Implementation Schedule
Table 1 – Summary of Metals Analytical Results - Groundwater

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Marcus Hook, Pennsylvania

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Attachment A
Perimeter Measures Implementation
Evergreen
Marcus Hook, Pennsylvania

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Table 1
Summary of Arsenic and Iron Analytical Results - Groundwater
AOI 7, Marcus Hook Industrial Complex (MHIC)

Location	Sample Date	Sample Type	Arsenic	Iron
			µg/L	µg/L
USEPA MCL			10	NS
Groundwater PRG			1,253	NS
MW-531L	5/25/2022	N	202,000	45,600
MW-532L	5/25/2022	N	1,430,000	60,300
MW-532L	5/25/2022	FD	1,380,000	51,700
MW-559D	5/26/2022	N	297	41,500
MW-560D	5/26/2022	N	14,600	52,800
MW-56D	5/25/2022	N	386,000	115,000
MW-606D	5/25/2022	N	636,000	319,000
MW-607D	5/26/2022	N	111,000	56,500
MW-608D	5/24/2022	N	494,000	73,600
MW-609D	5/24/2022	N	633,000	108,000
Equipment Blank	5/26/2022	EB	11.3	<100

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated and were analyzed by SGS North America, Inc. (SGS) of Dayton, New Jersey for dissolved arsenic and iron by United States Environmental Protection Agency (USEPA) Method 6010D. A sample type of "N" indicates a normal sample. A sample type of "FD" indicates a field duplicate sample. A sample type of "EB" indicates an equipment blank sample.
2. "USEPA MCL" are from the United States Environmental Protection Agency (EPA) website. The Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are enforceable standards for drinking water systems.
3. "Groundwater PRG" is the preliminary remediation goal (PRG) for dissolved arsenic in groundwater developed by Honeywell International, Inc. (Honeywell) for the protection of porewater.
4. **Bolded** values indicate an exceedance of the USEPA MCL.
 Gray shaded values indicate an exceedance of the Groundwater PRG.
 "<" indicates the analyte is not detected above laboratory reporting limits.
 "NS" indicates no standard.
 "µg/L" indicates micrograms per liter.
5. Data validation was performed on the samples provided in this table by Environmental Standards, Inc. of Valley Forge, Pennsylvania. All results are considered acceptable. Refer to the Data Validation Summary Reports for further details.